AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original) A color-image pickup device comprising:

a color filter unit which includes R filters, G filters, B filters, and an optical element having a dielectric multilayer film for infrared blocking, for decomposing light into a first component in a red wavelength range, a second component in a green wavelength range, and a third component in a blue wavelength range, wherein the R filters determine a lower wavelength limit of the red wavelength range, the G filters determine the green wavelength range, the B filters determine the blue wavelength range, and the dielectric multilayer film determines an upper wavelength limit of the red wavelength range;

an image pickup unit which is placed in a stage following said color filter unit, includes a plurality of photoelectric conversion elements being arranged in a light-reception area to receive said first, second, and third components, picks up an optical image from the first, second, and third components received by the plurality of photoelectric conversion elements, and outputs picture signals corresponding to the first, second, and third components;

a color-picture-signal generation unit which generates a color-picture signal based on said picture signal outputted from said image pickup unit; and

a transmittance distribution means for realizing a spatial distribution of a ratio of a transmittance of said first component received by ones of said plurality of photoelectric conversion elements arranged in each portion of said light-reception area to a transmittance of each of the second and third components received by ones of the plurality of photoelectric

conversion elements arranged in each said portion of the light-reception area, so that the ratio increases with a distance from a center of said light-reception area to each said portion of the light-reception area.

2. (Original) A color-image pickup device according to claim 1, wherein said ratio is increased by increasing the transmittance of the first component received by each said of the plurality of photoelectric conversion elements with the distance from the center of said light reception area to each said portion of the light reception area.

3. (Original) A color-image pickup device according to claim 1, wherein each of said R filters has a transmittance which increases with a distance from said center of the light-reception area to each of said R filters so that the R filters realize the transmittance distribution means.

4. (Original) A color-image pickup device according to claim 2, wherein each of said R filters has a transmittance which increases with a distance from said center of the light-reception area to each of said R filters so that the R filters realize the transmittance distribution means.

5-6. (canceled).

7. (Original) A color-image pickup device comprising:

a color filter unit which includes R filters, G filters, B filters, and an optical element having a dielectric multilayer film for infrared blocking, for decomposing light into a first component in a red wavelength range, a second component in a green wavelength range,

and a third component in a blue wavelength range, wherein the R filters determine a lower wavelength limit of the red wavelength range, the G filters determine the green wavelength range, the B filters determine the blue wavelength range, and the dielectric multilayer film determines an upper wavelength limit of the red wavelength range;

an image pickup unit which is placed in a stage following said color filter unit, includes a plurality of microlenses and a plurality of photoelectric conversion elements being arranged in a light-reception area to receive said first, second, and third components through the plurality of microlenses, picks up an optical image from the first, second, and third components received by the plurality of photoelectric conversion elements, and outputs picture signals corresponding to the first, second, and third components; and

a color-picture-signal generation unit which generates a color-picture signal based on said first, second, and third picture signals outputted from said image pickup unit;

wherein relative positions between each of said plurality of photoelectric conversion elements and one of said plurality of microlenses corresponding to the photoelectric conversion element are set in such a manner that a ratio of light-reception efficiency of the first component received by ones of said plurality of photoelectric conversion elements arranged in each portion of said light-reception area to light-reception efficiency of the second and third components received by ones of the plurality of photoelectric conversion elements arranged in each said portion of the light-reception area increases with a distance from a center of the light-reception area to each said portion of the light-reception area.

8. (Original) An electronic color camera comprising:

an image-forming optical system; and

a color-image pickup device optically coupled to said image-forming optical system;

wherein said color-image pickup device includes,

a color filter unit which includes R filters, G filters, B filters, and an optical element having a dielectric multilayer film for infrared blocking, for decomposing light into a first component in a red wavelength range, a second component in a green wavelength range, and a third component in a blue wavelength range, wherein the R filters determine a lower wavelength limit of the red wavelength range, the G filters determine the green wavelength range, the B filters determine the blue wavelength range, and the dielectric multilayer film determines an upper wavelength limit of the red wavelength range,

an image pickup unit which is placed in a stage following said color filter unit, includes a plurality of photoelectric conversion elements being arranged in a light-reception area to receive said first, second, and third components, picks up an optical image from the first, second, and third components received by the plurality of photoelectric conversion elements, and outputs picture signals corresponding to the first, second, and third components,

a color-picture-signal generation unit which generates a color-picture signal based on said picture signal outputted from said image pickup unit, and

a transmittance distribution means for realizing a spatial distribution of a ratio of a transmittance of said first component received by ones of said plurality of photoelectric conversion elements arranged in each portion of said light-reception area to a transmittance of each of the second and third components received by ones of the plurality of photoelectric conversion elements arranged in each said portion of the light-reception area so that the ratio

increases with a distance from a center of said light-reception area to each said portion of the light-reception area.

9. (canceled).

10. (Original) An electronic color camera comprising:

an image-forming optical system; and

a color-image pickup device optically coupled to said image-forming optical system;

wherein said color-image pickup device includes,

a color filter unit which includes R filters, G filters, B filters, and an optical element having a dielectric multilayer film for infrared blocking, for decomposing light into a first component in a red wavelength range, a second component in a green wavelength range, and a third component in a blue wavelength range, wherein the R filters determine a lower wavelength limit of the red wavelength range, the G filters determine the green wavelength range, the B filters determine the blue wavelength range, and the dielectric multilayer film determines an upper wavelength limit of the red wavelength range,

an image pickup unit which is placed in a stage following said color filter unit, includes a plurality of microlenses and a plurality of photoelectric conversion elements being arranged in a light-reception area to receive said first, second, and third components through the plurality of microlenses, picks up an optical image from the first, second, and third components received by the plurality of photoelectric conversion elements, and outputs picture signals corresponding to the first, second, and third components, and

a color-picture-signal generation unit which generates a color-picture signal based on said first, second, and third picture signals outputted from said image pickup unit;

wherein relative positions between each of said plurality of photoelectric conversion elements and one of said plurality of microlenses corresponding to the photoelectric conversion element are set in such a manner that a ratio of light-reception efficiency of the first component received by ones of said plurality of photoelectric conversion elements arranged in each portion of said light-reception area to light-reception efficiency of the second and third components received by ones of the plurality of photoelectric conversion elements arranged in each said portion of the light-reception area increases with a distance from a center of the light-reception area to each said portion of the light-reception area.

11. (new): A color-image pickup device according to claim 1, wherein the ratio is increased by decreasing the transmittance of the second and third components received by each said of the plurality of photoelectric conversion elements with the distance from the center of said light reception area to each said portion of the light reception area.

12. (new): A color-image pickup device according to claim 1, wherein the ratio is increased in such a manner that relative signal intensity of the first, second and third components become uniform in an entire light-reception area when the entire light reception area receives a light having a uniform color.

13. (new): A color-image pickup device according to claim 7, wherein the ratio is increased in such a manner that relative signal intensity of the first, second and third components become uniform in an entire light-reception area when the entire light reception area receives a light having a uniform color.

14. (new): A color-image pickup device according to claim 8, wherein the ratio is increased by decreasing the transmittance of the second and third components received by each said of the plurality of photoelectric conversion elements with the distance from the center of said light reception area to each said portion of the light reception area.

15. (new): A color-image pickup device according to claim 8, wherein the ratio is increased in such a manner that relative signal intensity of the first, second and third components become uniform in an entire light-reception area when the entire light reception area receives a light having a uniform color.

16. (new): A color-image pickup device according to claim 10, wherein the ratio is increased in such a manner that relative signal intensity of the first, second and third components become uniform in an entire light-reception area when the entire light reception area receives a light having a uniform color.